To: Cally Younger[cyounger@blm.gov]
From: Roberson, Edwin
Sent: 2017-08-29T19:43:47-04:00
Importance: Normal
Subject: Background Material
Received: 2017-08-30T00:56:16-04:00
WCPD-1996-09-23-Pg1785-2.pdf
WCPD-1996-09-23-Pg1788.pdf
8-15-96_Memo.pdf
11-6-98 Memo.pdf

Cally,

I wanted to send you some of the historic documents related to the monument designation. Attached below are 4 documents, that help clarify/detail the objects in the GSENM proclamation and the reasons for the boundaries as established. They include: The Proclamation, The President's speech given when issuing the Proclamation, the Memo from the Secretary to BLM Director on Management of GSENM (11-6-96) which includes a bibliography of monument resources that was completed in connection with the Proclamation, and a Memo from the Secretary to the President (8-15-1996). These can give you context. ed

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Ed Roberson,
Utah BLM State Director
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and celebrate the freedom and protection that it has always afforded us.

In commemoration of the signing of our Constitution and in recognition of the importance of informed, responsible citizenship, the Congress, by joint resolution of February 29, 1952 (36 U.S.C. 153), designated September 17 as "Citizenship Day," and by joint resolution of August 2, 1956 (36 U.S.C. 159), requested the President to proclaim the week beginning September 17 and ending September 23 of each year as "Constitution Week."

Now, Therefore, I, William J. Clinton, President of the United States of America, do hereby proclaim September 17, 1996, as Citizenship Day and September 17 through September 23, 1996, as Constitution Week, and urge all Americans to join in observing these occasions with appropriate programs and activities.

In Witness Whereof, I have hereunto set my hand this seventeenth day of September, in the year of our Lord nineteen hundred and ninety six, and of the Independence of the United States of America the two hundred and twenty first.

William J. Clinton

[Filed with the Office of the Federal Register, 11:22 a.m., September 18, 1996]

NOTE: This proclamation was published in the *Federal Register* on September 19.

Letter to Speaker Newt Gingrich on Legislation Prohibiting Possession of Firearms by Domestic Violence Offenders

September 17, 1996

Dear Mr. Speaker:

I am pleased that you have now joined me in supporting legislation to prohibit domestic violence offenders from obtaining firearms. No one who has committed an act of domestic violence against a spouse or child should be able to possess a firearm.

As you know, Senator Lautenberg and Representative Torricelli have introduced legislation that would achieve this objective. The Senate passed the Lautenberg bill for the second time last week by an overwhelming and bipartisan vote of 97 2. It is now time for the House to act on the Torricelli bill and join the Senate in supporting this bipartisan effort.

There were 88,500 incidents of domestic violence where a firearm was present in 1994. I signed the Brady Law in 1993 and to date it has prevented over 60,000 felons, fugitives and others from buying handguns. My 1994 Crime Bill included the historic Violence Against Women Act, which made it a crime for stalkers and harassers under restraining orders to carry a gun. That provision is beginning to take hold in Kentucky alone, over 300 stalkers and harassers were prohibited from buying firearms in one year. The legislation that you now support will build upon these important provisions.

I welcome your support and determination to complete this job. Protecting innocent women and children from deadly domestic violence is too important to let anything stand in the way. Bringing this bill to a vote in the House is an important step. But we must see it through to the end. Send it to me for my signature without further delay before Congress adjourns so that keeping guns out of the hands of all domestic violence offenders becomes the law of the land.

Sincerely,

Bill Clinton

NOTE: This letter was released by the Office of the Press Secretary on September 18.

Remarks Announcing the Establishment of the Grand Staircase-Escalante National Monument at Grand Canyon National Park, Arizona

September 18, 1996

Thank you very much, ladies and gentlemen. Thank you for being here and for being in such good spirits. Thank you, God, for letting the Sun come out. This is a sunny day we ought to have a sunny day for a sunny day.

Thank you, Rob Arnberger, for the work you do here at Grand Canyon National Park and for your participation; to all of our distinguished guests. I want to say a special word

of thanks to my good friend Governor Roy Romer from Colorado. And thank you, Secretary Bruce Babbitt, for your long, consistent, devoted efforts on behalf of America's natural heritage.

I also want to thank the Harvey High School choir and the students and the faculty from the Grand Canyon Unified School who are here. Where are you all? Thank you. I think this ought to qualify as an excused absence [*laughter*] or maybe even a field trip.

I want to thank all of our tribal leaders who are here and, indeed, all of the Native Americans who are here. We are following in your footsteps and honoring your ethic today.

I want to say a special word of thanks to my longtime friend Norma Matheson. Norma and her late husband, Scott, became great friends of Hillary's and mine when we served together as Governors. After Scott passed away, Norma honored me by asking me to come to Utah to speak at a dinner in his honor for a foundation set up in his memory. I never was with Scott Matheson, I never even talked to him on the phone that I did not feel I was in the presence of a great man. Both of them are truly wonderful human beings. And I am very grateful for her presence here today and for her commitment.

And finally, I want to thank, more strongly than I can ever convey to you, the Vice President for his passion, his commitment, his vision, and his sheer knowledge of environmental and natural heritage issues. It has become a treasure for the United States, and I have mined it frequently for 4 years.

I remember when I was trying to decide what sort of person I wanted to ask to run with me for Vice President, and I made up my mind I wanted somebody who was smarter than I was that left a large field to pick from [*laughter*] someone who was philosophically in tune with me, someone who would work like crazy, and someone who knew things I didn't know. And I read ''Earth in the Balance,'' and I realized it was a profoundly important book by someone who knew things I wanted to learn. And we have learned a lot and done a lot together over the last 4 years. Very few things we have done will have a more positive, lasting effect than this, and it will always have Al Gore's signature on it as well. And I thank him for what he has done.

Ladies and gentlemen, the first time I ever came to the Grand Canyon was also in 1971 in the summer. And one of the happiest memories of my entire life was when, for some fluky reason, even in the summertime, I found a place on a rock overlooking the Grand Canyon where I was all alone. And for 2 hours I sat, and I lay down on that rock, and I watched the sunset. And I watched the colors change layer after layer after layer for 2 hours. I could have sat there for 2 days if the Sun had just taken a little longer to set. [*Laughter*] And even today, 25 years later, in hectic, crazy times, in lonely, painful times, my mind drifts back to those 2 hours that I was alone on that rock watching the sunset over this Canyon. And it will be with me till the day I die. I want more of those sights to be with all Americans for all time to come.

As all of you know, today we are keeping faith with the future. I'm about to sign a proclamation that will establish the Grand Staircase Escalante National Monument. Why are we doing this? Well, if you look at the Grand Canyon behind me, it seems impossible to think that anyone would want to touch it. But in the past there have been those who wanted to build on the Canyon, to blast it, to dam it. Fortunately, these plans were stopped by far sighted Americans who saw that the Grand Canyon was a national treasure, a gift from God that could not be improved upon.

The fact that we stand here is due, in large part, to the Antiquities Act of 1906. The law gives the President the authority to protect Federal lands of extraordinary cultural, historic, and scientific value, and in 1908 that's just what Theodore Roosevelt did when he protected the Grand Canyon.

Since then, several Presidents of both parties, Republicans and Democrats, have worked to preserve places that we now take for granted as part of our own unchanging heritage: Bryce Canyon, Zion, Glacier Bay, Olympic, Grand Teton. These places many of you have been to, and I've been to many of them myself. I thank goodness that the

Antiquities Act was on the books and that Presidents, without regard to party, used it to protect them for all of us and for generations to come.

Today we add a new name to that list: the Grand Staircase Escalante National Monument. Seventy miles to the north of here in Utah lies some of the most remarkable land in the world. We will set aside 1.7 million acres of it.

On this site, on this remarkable site, God's handiwork is everywhere in the natural beauty of the Escalante Canyons and in the Kaiparowits Plateau, in the rock formations that show layer by layer billions of years of geology, in the fossil record of dinosaurs and other prehistoric life, in the remains of ancient American civilizations like the Anasazi Indians.

Though the United States has changed and Utah has grown, prospered, and diversified, the land in the Utah monument remains much as it did when Mormon pioneers made their way through the Red Canyons in the high desert in the late 1800's. Its uniquely American landscape is now one of the most isolated places in the lower 48 States. In protecting it, we live up to our obligation to preserve our natural heritage. We are saying very simply, "Our parents and grandparents saved the Grand Canyon for us; today, we will save the Grand Escalante Canyons and the Kaiparowits Plateaus of Utah for our children.''

Sometimes progress is measured in mastering frontiers, but sometimes we must measure progress in protecting frontiers for our children and all children to come. Let me make a few things about this proclamation clear: First, it applies only to Federal lands, lands that belong already to the American people. Second, under the proclamation, families will be able to use this canyon as they always have: The land will remain open for multiple uses including hunting, fishing, hiking, camping, and grazing. Third, the proclamation makes no Federal water rights claims. Fourth, while the Grand Staircase Escalante will be open for many activities, I am concerned about a large coal mine proposed for the area. Mining jobs are good jobs, and mining is important to our national economy and to our national security. But we can't have mines everywhere, and we shouldn't have mines that threaten our national treasures.

That is why I am so pleased that PacifiCorp has followed the example set by Crown Butte New World Mine in Yellowstone. PacifiCorp has agreed to trade its lease to mine coal on these lands for better, more appropriate sites outside the monument area. I hope that Andalex, a foreign company, will follow PacifiCorp's example and work with us to find a way to pursue its mining operations elsewhere.

Now, let me also say a word to the people of Utah. Mining revenues from Federal and State lands help to support your schools. I know the children of Utah have a big stake in school lands located within the boundaries of the monument that I am designating today. In the past these scattered school lands have never generated significant revenues for the Utah school trust. That's why Governor Scott Matheson, one of the greatest public figures in the history of Utah, asked the Congress to authorize the exchange of nonrevenue producing lands for other Federal lands that can actually provide revenue for the school trust.

Finally, I was able to sign legislation to accomplish that goal in 1993. And I will now use my office to accelerate the exchange process. I have directed Secretary Babbitt to consult with Governor Leavitt, Congressman Orton, Senators Bennett and Hatch to form an exchange working group to respond promptly to all exchange requests and other issues submitted by the State and to resolve reasonable differences in valuation in favor of the school trust. By taking these steps, we can both protect the natural heritage of Utah's children and ensure them a quality educational heritage.

I will say again, creating this national monument should not and will not come at the expense of Utah's children. Today is also the beginning of a unique 3 year process during which the Bureau of Land Management will work with State and local governments, Congressman Orton, and the Senators and other interests to set up a land management process that will be good for the people of Utah and good for Americans. And I know

a lot of you will want to be involved in that and to be heard as well.

Let us always remember, the Grand Stair case Escalante is for our children. For our children we have worked hard to make sure that we have a clean and safe environment, as the Vice President said. I appreciate what he said about the Yellowstone, the Mojave Desert, the Everglades, the work we have done all across this country to try to preserve our natural heritage and clean up our envi ronment. I hope that we can once again pur sue that as an American priority without re gard to party or politics or election seasons. We all have the same stake in our common future.

If you'll permit me a personal note, an other one, it was 63 years ago that a great Democrat first proposed that we create a na tional monument in Utah's Canyonlands. His name was Harold Ickes. He was Franklin Roosevelt's Interior Secretary. And I'm sorry he never got a chance to see that his dream would become a reality, but I'm very glad that his son and namesake is my Deputy Chief of Staff and is here today.

And it was 30 years before that, 93 years ago, that a great Republican President, Theo dore Roosevelt, said we should make the Grand Canyon a national monument. In 1903, Teddy Roosevelt came to this place and said a few words from the rim of the Canyon I'd like to share with you as we close today:

"Leave the Grand Canyon as it is. You can not improve upon it. What you can do is keep it for your children, your children's children, all who come after you. We have gotten past the stage when we are pardoned if we treat any part of our country as something to be skinned for. The use of the present genera tion, whether it is the forest, the water, the scenery, whatever it is, handle it so that your children's children will get the benefit of it."

It was President Roosevelt's wisdom and vision that launched the Progressive Era and prepared our Nation for the 20th century. Today we must do the same for the 21st cen tury. I have talked a lot about building a bridge of possibility to that 21st century, by meeting our challenges and protecting our values. Today the Grand Staircase Escalante National Monument becomes a great pillar in our bridge to tomorrow.

Thank you, and God bless you all.

NOTE: The President spoke at 12:10 p.m. outside El Tovar Lodge. In his remarks, he referred to Rob Arnberger, Superintendent, Grand Canyon National Park; Norma Matheson, widow of former Utah Gov. Scott Matheson; and Gov. Michael O. Leavitt of Utah.

Proclamation 6920—Establishment of the Grand Staircase-Escalante National Monument

September 18, 1996

By the President of the United States of America

A Proclamation

The Grand Staircase Escalante National Monument's vast and austere landscape em braces a spectacular array of scientific and historic resources. This high, rugged, and re mote region, where bold plateaus and multi hued cliffs run for distances that defy human perspective, was the last place in the con tinental United States to be mapped. Even today, this unspoiled natural area remains a frontier, a quality that greatly enhances the monument's value for scientific study. The monument has a long and dignified human history: it is a place where one can see how nature shapes human endeavors in the Amer ican West, where distance and aridity have been pitted against our dreams and courage. The monument presents exemplary opportu nities for geologists, paleontologists, arche ologists, historians, and biologists.

The monument is a geologic treasure of clearly exposed stratigraphy and structures. The sedimentary rock layers are relatively undeformed and unobscured by vegetation, offering a clear view to understanding the processes of the earth's formation. A wide variety of formations, some in brilliant colors, have been exposed by millennia of erosion. The monument contains significant portions of a vast geologic stairway, named the Grand Staircase by pioneering geologist Clarance Dutton, which rises 5,500 feet to the rim of Bryce Canyon in an unbroken sequence of great cliffs and plateaus. The monument in

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cludes the rugged canyon country of the upper Paria Canyon system, major compo nents of the White and Vermilion Cliffs and associated benches, and the Kaiparowits Pla teau. That Plateau encompasses about 1,600 square miles of sedimentary rock and consists of successive south to north ascending pla teaus or benches, deeply cut by steep walled canyons. Naturally burning coal seams have scorched the tops of the Burning Hills brick red. Another prominent geological feature of the plateau is the East Kaibab Monocline, known as the Cockscomb. The monument also includes the spectacular Circle Cliffs and part of the Waterpocket Fold, the inclusion of which completes the protection of this geologic feature begun with the establish ment of Capitol Reef National Monument in 1938 (Proclamation No. 2246, 50 Stat. 1856). The monument holds many arches and natu ral bridges, including the 130 foot high Escalante Natural Bridge, with a 100 foot span, and Grosvenor Arch, a rare ''double arch.'' The upper Escalante Canyons, in the northeastern reaches of the monument, are distinctive: in addition to several major arch es and natural bridges, vivid geological fea tures are laid bare in narrow, serpentine can yons, where erosion has exposed sandstone and shale deposits in shades of red, maroon, chocolate, tan, gray, and white. Such diverse objects make the monument outstanding for purposes of geologic study.

The monument includes world class pale ontological sites. The Circle Cliffs reveal re markable specimens of petrified wood, such as large unbroken logs exceeding 30 feet in length. The thickness, continuity and broad temporal distribution of the Kaiparowits Pla teau's stratigraphy provide significant oppor tunities to study the paleontology of the late Cretaceous Era. Extremely significant fossils, including marine and brackish water mol lusks, turtles, crocodilians, lizards, dinosaurs, fishes, and mammals, have been recovered from the Dakota, Tropic Shale and Wahweap Formations, and the Tibbet Canyon, Smoky Hollow and John Henry members of the Straight Cliffs Formation. Within the monu ment, these formations have produced the only evidence in our hemisphere of terres trial vertebrate fauna, including mammals, of the Cenomanian Santonian ages. This se quence of rocks, including the overlaying Wahweap and Kaiparowits formations, con tains one of the best and most continuous records of Late Cretaceous terrestrial life in the world.

Archeological inventories carried out to date show extensive use of places within the monument by ancient Native American cul ture. The area was a contact point for the Anasazi and Fremont cultures, and the evi dence of this mingling provides a significant opportunity for archeological study. The cul tural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution. Hundreds of recorded sites include rock art panels, occupation sites, campsites and gra naries. Many more undocumented sites that exist within the monument are of significant scientific and historic value worthy of preser vation for future study.

The monument is rich in human history. In addition to occupations by the Anasazi and Fremont cultures, the area has been used by modern tribal groups, including the Southern Paiute and Navajo. John Wesley Powell's ex pedition did initial mapping and scientific field work in the area in 1872. Early Mormon pioneers left many historic objects, including trails, inscriptions, ghost towns such as the Old Paria townsite, rock houses, and cowboy line camps, and built and traversed the re nowned Hole in the Rock Trail as part of their epic colonization efforts. Sixty miles of the Trail lie within the monument, as does Dance Hall Rock, used by intrepid Mormon pioneers and now a National Historic Site.

Spanning five life zones from low lying desert to coniferous forest, with scarce and scattered water sources, the monument is an outstanding biological resource. Remoteness, limited travel corridors and low visitation have all helped to preserve intact the monu ment's important ecological values. The blending of warm and cold desert floras, along with the high number of endemic spe cies, place this area in the heart of perhaps the richest floristic region in the Inter mountain West. It contains an abundance of unique, isolated communities such as hang ing gardens, tinajas, and rock crevice, canyon bottom, and dunal pocket communities, which have provided refugia for many an

cient plant species for millennia. Geologic uplift with minimal deformation and subsequent downcutting by streams have exposed large expanses of a variety of geologic strata, each with unique physical and chemical characteristics. These strata are the parent material for a spectacular array of unusual and diverse soils that support many different vegetative communities and numerous types of endemic plants and their pollinators. This presents an extraordinary opportunity to study plant speciation and community dynamics independent of climatic variables. The monument contains an extraordinary number of areas of relict vegetation, many of which have existed since the Pleistocene, where natural processes continue unaltered by man. These include relict grasslands, of which No Mans Mesa is an outstanding example, and pinon juniper communities containing trees up to 1,400 years old. As witnesses to the past, these relict areas establish a baseline against which to measure changes in community dynamics and biogeochemical cycles in areas impacted by human activity. Most of the ecological communities contained in the monument have low resistance to, and slow recovery from, disturbance. Fragile cryptobiotic crusts, themselves of significant biological interest, play a critical role throughout the monument, stabilizing the highly erodible desert soils and providing nutrients to plants. An abundance of pack rat middens provides insight into the vegetation and climate of the past 25,000 years and furnishes context for studies of evolution and climate change. The wildlife of the monument is characterized by a diversity of species. The monument varies greatly in elevation and topography and is in a climatic zone where northern and southern habitat species intermingle. Mountain lion, bear, and desert bighorn sheep roam the monument. Over 200 species of birds, including bald eagles and peregrine falcons, are found within the area. Wildlife, including neotropical birds, concentrate around the Paria and Escalante Rivers and other riparian corridors within the monument.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

Now, Therefore, I, William J. Clinton, President of the United States of America, by the authority vested in me by section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Grand Staircase Escalante National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the boundaries of the area described on the document entitled ''Grand Staircase Escalante National Monument'' attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 1.7 million acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from entry, location, selection, sale, leasing, or other disposition under the public land laws, other than by exchange that furthers the protective purposes of the monument. Lands and interests in lands not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

The establishment of this monument is subject to valid existing rights.

Nothing in this proclamation shall be deemed to diminish the responsibility and authority of the State of Utah for management of fish and wildlife, including regulation of hunting and fishing, on Federal lands within the monument.

Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by appli

cable laws and regulations other than this proclamation.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities, to implement the purposes of this proclamation. The Secretary of the Interior shall prepare, within 3 years of this date, a management plan for this monument, and shall promulgate such regulations for its management as he deems appropriate. This proclamation does not reserve water as a matter of Federal law. I direct the Secretary to address in the management plan the extent to which water is necessary for the proper care and management of the objects of this monument and the extent to which further action may be necessary pursuant to Federal or State law to assure the availability of water.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

In Witness Whereof, I have hereunto set my hand this eighteenth day of September, in the year of our Lord nineteen hundred and ninety six, and of the Independence of the United States of America the two hundred and twenty first.

William J. Clinton

[Filed with the Office of the Federal Register, 12:27 p.m., September 23, 1996]

NOTE: This proclamation will be published in the *Federal Register* on September 24.

Proclamation 6918—National POW/MIA Recognition Day, 1996

September 18, 1996

By the President of the United States of America

A Proclamation

Since our country's birth, Americans have responded to military threats against liberty and democracy, whether at home or in remote areas of the world. The young men and women of our Armed Forces understand the need to resist oppression, and they have willingly put themselves in harm's way around the globe to do so. Those young Americans who stand in the defense of freedom are our country's most precious natural resource.

It is particularly painful when these brave Americans are made Prisoners of War, or are classified as Missing in Action. They have earned our deep appreciation and respect for the great sacrifices they have made so that all of us can continue to enjoy the privileges of liberty. In keeping faith with them, we continue our concerted efforts to determine the fate of all those who are unaccounted for and to bring home the remains of those who have perished.

The grief for our prisoners of war and those missing in action is most intense, of course, among their families and loved ones at home, who wait often for years, and sometimes in vain for confirmation of their fate. These families display their own courage too, by their endurance in the face of deep anxiety. Their cause is our cause, and we pledge ourselves to them anew on this special day.

On September 20, 1996, the flag of the National League of Families of American Prisoners of War and Missing in Southeast Asia, a black and white banner symbolizing all of America's missing, will be flown over the White House, the United States Capitol, the United States Departments of State, Defense, and Veterans Affairs, the Selective Service System headquarters, the Vietnam Veterans Memorial, the Korean War Veterans Memorial, and national cemeteries across the country.

Now, Therefore, I, William J. Clinton, President of the United States of America, by virtue of the authority vested in me by the Constitution and laws of the United States, do hereby proclaim September 20, 1996, as National POW/MIA Recognition Day. I ask all Americans to join me in honoring former American POWs and those Americans still unaccounted for as a result of their service to our great Nation. I also encourage the American people to express their gratitude to the families of these missing Ameri

THE SECRETARY OF THE INTERIOR

WASHINGTON

August 15, 1996

Memorandum for the President

INTRODUCTION AND SUMMARY

In response to your request, attached as **Exhibit A** is a draft proclamation, with an accompanying map,[1] to establish the Grand Staircase-Escalante National Monument in southern Utah. This memorandum describes (a) the basis for my recommendation that you establish the Grand Staircase-Escalante National Monument, (b) the proclamation, and (c) the resources, ownership patterns and management issues present in the area. After careful review of the record, I am convinced that the objects satisfy the criteria for establishment of a national monument pursuant to the Antiquities Act, and that the boundaries of the land reserved represent the smallest area compatible with the proper care and management of those objects.

THE ANTIQUITIES ACT

Section 2 of the Antiquities Act, 16 U.S.C. § 431, authorizes the President to establish as national monuments "objects of historic or scientific interest that are situated upon the lands owned or controlled by the government of the United States." It further authorizes the President to reserve, as part of the monument, land that is "the smallest area compatible with the proper care and management of the objects to be protected."

A. Objects of Historic or Scientific Interest

The proposed Grand Staircase-Escalante National Monument is located on the Colorado Plateau in south-central Utah, within the drainage of the Colorado River. Elevation ranges from 4,100 to 8,200 feet

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[1] The boundaries of the proposed monument are drawn on the map entitled "Grand Staircase-Escalante National Monument," which would be attached to, and made a part of, your proclamation. A reduced version of this map suitable for publication would be promptly prepared should you decide to proceed. Because of the acreages involved, it is not practicable, as of this date, to describe the boundaries of the land reserved as a part of the monument either by metes and bounds or by reference to designated subdivisions on official surveys shown on publicly recorded plats or maps. The BLM will produce a description conforming to the BLM Specifications for Descriptions of Tracts of Land for Use in Land Orders and Proclamations as soon as practicable should you decide to proceed.

above sea level. The map appended to the proclamation attached as Exhibit A sets out the boundaries of the land reserved for the monument. The area covers about 1.7 million acres. The proclamation attached to this memo as Exhibit A vividly describes objects in the area that warrant protection as a monument, and **Exhibit B** lists historic and scientific objects in this area. Attached as **Exhibit C** is a bibliography of the principal sources of information relied upon in making this recommendation.

The area recommended to be included in the monument has remained isolated and relatively undisturbed and for the most part unroaded. Most of the land within the outer boundaries of the proposed monument is federally owned. The nonfederal land is owned mostly by the State of Utah in scattered 640 acre sections, the result of Utah's statehood land grant. Currently, the federal lands in the area are used primarily for scientific study, primitive recreation, and livestock grazing.

In the last few decades the area in question has been evaluated for the possibility of providing greater recognition of and legal protection for its resources. In the late 1970s, the area was evaluated for its "wilderness characteristics" under FLPMA, and several wilderness study areas, totaling about 900,000 acres, were established in the area covered by the proclamation. The documentation of these areas assembled in the wilderness inventory and study process has identified many of the objects of scientific and historic interest within the monument area.

Nearby federal lands have been recognized by Congress to contain scientific and historic features worthy of protection. For example, in 1972 Congress created the Glen Canyon National Recreation Area (GCNRA) in order to, among other things, "preserve [its] . . . scientific, and historic features contributing to public enjoyment of the area." 16 U.S.C. § 460dd. The GCNRA forms the eastern and part of the southern boundary of the area covered in the attached proclamation. Similarly, Congress established Canyonlands National Park to the northeast in 1964 in recognition of, among other things, its "scientific" and "archaeologic" features, 16 U.S.C. § 271.

More than one hundred national monuments have been established by Presidents over the past ninety years. Attached as **Exhibit D** is a complete list. **Exhibit E** lists the monuments by President. **Exhibit F** is a list of the monuments found wholly or partially on the Colorado Plateau, in the general vicinity of this monument. Most of the proclamations establishing these monuments cited geologic, paleontologic, archaeologic and other features similar to those in the attached proclamation. Many of them included substantial land areas, and/or were enlarged by subsequent proclamations or acts of Congress. A number of them ultimately were designated as National Parks by Congress.

For example, what is now Zion National Park to the west of the monument was originally established by President Taft as Mukuntuweap National Monument in 1909 in order to protect its "many natural features of unusual archaeologic, geologic, and geographic interest" (Proclamation No. 877, 36 Stat. 2498). President Wilson enlarged it in 1918 (Proclamation No. 1435, 40 Stat. 1760), and Congress made it into a national park in 1919 (16 U.S.C. § 344, 41 Stat. 356). President Franklin Roosevelt established Zion National Monument in an adjacent area in 1937 (Proclamation No. 2221, 50 Stat. 1809), and Congress merged it into Zion National Park in 1956 (70 Stat. 527).

President Hoover established Arches National Monument to the northeast in 1929, citing its "unique wind-worn sandstone formations, the preservation of which is desirable because of their educational and scenic value" (Proclamation No. 1875, 46 Stat. 2988). Arches was later expanded by Presidents Franklin Roosevelt and Johnson (Proclamation Nos. 2312 and 3887), and Congress made it a National Park in 1971 (16 U.S.C. § 272, 85 Stat. 422). President Roosevelt established Capitol Reef National Monument to the immediate east in 1938 to protect its "narrow canyons displaying evidence of ancient sand dune deposits of unusual scientific value, and . . . various other objects of geological and scientific interest" (Proclamation No. 2246, 50 Stat. 1856). Presidents Eisenhower and Johnson expanded it (Proclamation Nos. 3249 and 3888), and Congress made it a National Park in 1971 (85 Stat. 739). President Harding set aside Bryce Canyon National Monument to the immediate north and northwest in 1923, citing its "unusual scenic beauty, scientific interest and importance" (Proclamation No. 1664, 43 Stat. 1914) , and President Hoover expanded it twice, Proclamation Nos. 1930, 1952, 46 Stat. 3042, 47 Stat. 2455. Congress made it Utah National Park in 1924 (43 Stat. 593) and four years later changed its name to Bryce Canyon National Park (45 Stat. 147).

Farther west on the Colorado Plateau, Cedar Breaks National Monument was established by Franklin Roosevelt in 1933 to protect its "spectacular cliffs, canyons, and features of scenic, scientific, and educational interest" (Proclamation No. 2054, 48 Stat. 1705), and its boundary was subsequently revised by Congress in 1942 (56 Stat. 141) and 1961 (75 Stat. 198). President Theodore Roosevelt established Natural Bridges National Monument in 1908 to preserve "extraordinary examples of stream erosion" and "prehistoric ruins" (Proclamation No. 804, 35 Stat. 2183), and Presidents Taft, Wilson and Kennedy enlarged it (Proclamation Nos. 881, 1323, 3486). Rainbow Bridge National Monument was established by President Taft in 1910, who described it as "of great scientific interest as an example of eccentric stream erosion" (Proclamation No. 1043, 36 Stat. 2703).

The courts (including the U.S. Supreme Court) have occasionally been asked to review exercises of Presidential authority under the

Antiquities Act. They have uniformly upheld establishment of national monuments, e.g.:

> Grand Canyon National Monument, on the basis of its unique geology, scientific interest and general public appeal, Cameron v. United States, 252 U.S. 450 (1920);
>
> Devil's Hole National Monument, on the basis of its unique resident pupfish species and the hydrology of the water pool, Cappaert v. United States, 426 U.S. 128 (1976);
>
> Jackson Hole National Monument, on the basis of the interrelationship of living systems, the geologic features and the history of the area, State of Wyoming v. Franke, 58 F. Supp. 890 (D. Wyo. 1945); and
>
> Channel Islands National Monument, expanded on the basis of its varied marine life, fossils, and geology, United States v. California, 436 U.S. 32, 36 (1978).

B. Land Area Reserved for the Proper Care and Management of the Objects to be Preserved

The Antiquities Act authorizes the President, as part of his declaration of a national monument, to reserve land, "the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected." 16 U.S.C. § 431 (emphasis added). The area proposed for reservation has been carefully delineated, based on review of available information, to meet the goals of effectively caring for and managing the objects in perpetuity.

The area includes the archaeologic, biologic, paleontologic, geologic, and historic objects identified in the Proclamation and Exhibits B and C accompanying this letter. Some of these objects are present throughout the entire monument area, others are scattered within it, and several lie along the borders of the area. Many objects also overlap. Thus, the entire area is necessary for protection of the objects. Even if it were possible to reserve a smaller area by isolating certain objects, such a fragmentation of the proposed monument would endanger many of the objects, undermine the purposes of the monument itself, and create substantial impediments to effective management of the monument.

The area of the proposed monument is based on the conservation needs of the objects to be protected. Some of the objects identified are present throughout the area, and others cover immense, interconnected areas of land or depend for their scientific value on their location at various sites or elevations. Some of the scientific and historic value of certain objects comes from their scarcity and fragility or the fact that they have remained relatively undisturbed and unchanged. Preservation of

such objects (the biologic and archaeologic resources are examples) requires, among other things, protection of land surrounding them in order to maintain the relatively remote conditions that have made their continued existence possible.

Furthermore, the scientific value of many of the objects within the monument requires preservation of areas large enough to maintain the objects and their interactions. For example, species that exist because of the area's extraordinary geologic and environmental stability are distributed according to the geologic features to which they have adapted. Much of the biologic and other scientific interest in the area results from the variety of geologic substrates across elevational gradients. Many species must range within and through the area and neighboring protected areas to maintain viable populations and their role in the ecosystem. Thus, protection of the aggregate area is necessary for proper care of the objects. In addition, a number of the objects are distributed through multiple parts of the area; significant fossils, for example, are distributed throughout the Dakota, Tropic Shale, Straight Cliffs, Wahweap and Iron Springs Formations. Management of a patchwork of reserved lands would be impractical, as it would make it more difficult to care for the objects, reduce options for natural resource management and lead to inconsistent resource management standards for overlapping resources. In short, our analysis indicates that reservation of a smaller area would undermine proper care and management of the monument.

There is ample precedent for declaring analogous geologic, biologic and historic objects to be protected under the Antiquities Act, and reserving correspondingly large areas of land as part of their monument designations. President Theodore Roosevelt was the first President to exercise such presidential discretion in his reservation of over 800,000 acres as the Grand Canyon National Monument. More recent examples include the Wrangell-St. Elias National Monument, which encompassed 10,950,000 acres to protect an assemblage of mountain peaks, including Mount St. Elias and the Mount Wrangell volcano, and the flora and fauna of the Bremner and Chitina River Valleys. The Yukon Flats National Monument, consisting of approximately 10,600,000 acres, encompassed the largest and most complete example of an interior Alaskan solar basin with its associated ecosystem. In closer proximity, 1.6 million acres were initially reserved for the Death Valley National Monument, which Presidents subsequently expanded and Congress expanded again and protected as Death Valley National Park. At 1.7 million acres, the area that I recommend for reservation is comparable in size to some of the earlier Monuments that protected natural resources for scientific and historic purposes.

Many relatively large Monuments were later expanded because they were found to be too small for the care and management of their objects or associated objects. The history of Zion National Monument and Park, described above, provides one example. The area

of land that I recommend you reserve is based on our current understanding of the extent of, and interrelationships between, the objects to be protected.

Finally, although some of the objects to be protected in the proposed monument also exist in surrounding areas, I recommend that you reserve only the identified acreage for the monument. Many of these other areas are already protected under the jurisdiction of various federal or state agencies, with whom the Bureau of Land Management (the BLM) will work to assist in the conservation of shared resources. For example, objects in the eastern and southern end of the Escalante region not included in the proposed monument are subject to protective management in Glen Canyon Recreation Area and Capitol Reef National Park. While additional areas of the Grand Staircase also could have been included in the monument, by limiting the monument and its reserved land to that proposed, a portion of each aspect of the Grand Staircase will be federally protected in some manner, whether within this monument or within Zion or Bryce Canyon National Parks. Finally, the boundaries have been drawn to exclude many non-federal lands, and, for effective management, often lie along the border of BLM lands. In sum, based on available information, I recommend that you reserve only the area delineated on the map accompanying Exhibit A.

LEGAL EFFECTS OF THE PROCLAMATION

I direct your attention to several significant aspects of the proclamation attached as Exhibit A. First, it would reserve only the federal lands in the area, because the Antiquities Act applies only to "objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States." 16 U.S.C. § 431.

Second, the proclamation would be subject to valid existing rights. Thus, to the extent a person or entity already owns a valid property right in the federal lands or resources within the area, the exercise of such rights may be regulated in order to protect the purposes of the monument, but the regulation must respect such rights.

Third, the proclamation withdraws the federal lands in the area from "entry, location, selection, sale, leasing, or other disposition under the public land laws, other than by exchange that furthers the protective purposes of the monument." This withdrawal prevents the location of new mining claims in the area under the Mining Law, and prevents the Secretary of the Interior from exercising discretion under the mineral leasing acts and related laws to lease or sell federal minerals in the area.

Fourth, the proclamation would not reserve the water resources of the area under federal law pursuant to the so-called Winters

doctrine. Some of the objects to be protected under the proclamation (e.g., paleontology, archeology) do not require water. The proclamation would direct the Secretary to address, in the management plan described in the next paragraph, the extent to which water is necessary for the proper care and management of the objects of the monument, and the extent to which further action may be necessary pursuant to federal or state law to assure the availability of water.

Fifth, the proclamation would direct the Secretary to prepare a management plan for the area within three years. The plan, which would be prepared using the resource planning processes of FLPMA, would provide specific, on-the-ground guidance for protecting the objects within the monument, while permitting other uses to proceed where consistent with the purposes of the monument. While it is not possible, in advance of completion of the management plan, to set forth all the details of how existing or proposed future activities in the area would be affected in order to protect the purposes of the monument, the effects are described in general terms further below.

ADMINISTRATION OF THE MONUMENT

A. Management by the Bureau of Land Management

The federal lands in the area described in the attached proclamation are currently under the jurisdiction of the Bureau of Land Management (BLM) in the Department of the Interior. BLM manages the land pursuant to its basic organic authorities, the primary one being the Federal Land Policy and Management Act of 1976 (FLPMA).

I believe the area is best left under BLM management, and the attached proclamation would have the Secretary of the Interior manage the monument through the BLM. The result would be that management of the federal land would continue under the BLM's existing authorities, but subject to the overriding purpose of protecting the objects described in the proclamation. The establishment of the monument thus constitutes an overlay on the management regime otherwise applicable to lands managed by the BLM. It limits the management discretion that the BLM would otherwise have, by mandating protection of the historic and scientific objects within the national monument.

Congress has had before it over the past several years various bills that would designate parts of the area within the monument as wilderness. As noted earlier, about 900,000 acres in the monument have been classified as wilderness study areas pursuant to FLPMA, and managed by law to preserve their suitability for preservation as wilderness pursuant to the Wilderness Act of 1964, 16 U.S.C. §§ 1131-35, until Congress directs otherwise. See 43 U.S.C. § 1782.

The Wilderness Act of 1964 serves some values (e.g., outstanding opportunities for solitude and primitive and unconfined recreation) that are not addressed in the Antiquities Act of 1906 which, as noted earlier, serves to protect "objects of historic or scientific interest." Section 2(c) of the Wilderness Act does expressly acknowledge that a wilderness area "may . . . contain ecological, geological, or other features of scientific, educational ... or historic value," and section 4(b) directs that wilderness areas "shall be devoted to the public purposes" of, among others, "scientific, educational, conservation, and historical use."

The extent of any overlap between wilderness management and protecting the objects within this monument would be addressed in the process of preparing a management plan for this monument. Nothing in the proclamation establishing this monument would prevent the Executive from recommending, or Congress from designating, areas within the monument as wilderness. Congress has, in fact, many times in the past designated wilderness within existing national monuments, including the following monuments: Badlands, Bandelier, Black Canyon of the Gunnison, Chiricahua, Craters of the Moon, Joshua Tree, Lava Beds, Misty Fjords, Organ Pipe Cactus, Pinnacles, and Saguaro.

B. Impact of monument designation on existing or planned activities in the area

1. Currently permitted livestock grazing (including existing pipelines, water impoundments and similar range improvements), hunting, fishing, off-road vehicle use, and similar activities

These activities would generally not be affected at current levels or in current areas of use. The only exceptions are (1) where the management plan to be prepared identifies specific places where such uses ought to be restricted or prohibited as necessary to protect the objects protected by the monument proclamation; or (2) where, in advance of completion of the management plan, the BLM land manager finds a clear threat from such a use to an object protected by the designation and the circumstances demand swift protective action. Except in emergency situations, any restrictions on the current levels or areas of use of such activities will be adopted only after a public process and only where necessary to protect the purposes of the monument.

Such uses would, of course, remain subject to existing laws and regulations other than the Antiquities Act, and therefore remain subject to regulation under such provisions for reasons other than establishment of the monument.

2. Use of existing rights-of-way (such as those established under R.S. 2477 or Title V of FLPMA)

As noted earlier, the area covered by the proclamation has very few roads. Use of existing rights-of-way would generally be subject to the same standards as described in the preceding section addressing currently permitted uses. In some cases existing rights-of-way may include valid existing rights. The exercise of such rights may be regulated in order to protect the purposes of the monument, but any regulation must respect such rights.

3. Activities on state or private land

The area within the boundaries of the proclamation contains approximately 180,000 acres of state land (mostly checkerboarded, four sections to each township, pursuant to the terms of the Utah statehood act). It also contains approximately 15,000 acres of private land. The monument designation would not apply to those lands. The legal principles applicable to the use of these lands prior to establishment of the monument would continue to apply.

4. Mining claims

New mining claims would be prohibited as the proclamation withdraws the area from the Mining Law. Existing mining claims that contain a valid discovery of a valuable mineral deposit as of the date of the designation would contain valid existing rights. The exercise of such rights may be regulated in order to protect the purposes of the monument, but any regulation must respect such rights. Activities on existing mining claims that lack a discovery may be regulated to protect the purposes of the monument.

5. Coal Mining Proposals

The proposed monument contains coal resources, particularly in the Kaiparowits coal field. Limited mining for local use dates back decades, but has cumulatively totaled only a few thousand tons. Test mining of a few thousand additional tons took place in the 1970s, but there has never been a major mine, nor any other major development, in the area proposed for the monument. There have, however, been a number of proposals over the years to open coal mines and build power plants in the region.

In the mid-1960s the Department issued numerous coal leases to private entities in the Kaiparowits coal field. A number of these leases have expired or will expire in the near future. The principal remaining lessees are Pacificorp (successor to Utah Power & Light Co.) (about 18,000 acres) and Andalex Resources, Inc. (about 34,000 acres).

In the 1970s several mines and a large mine-mouth power plant were proposed in the area, but after extensive study and considerable public controversy, the proposals were withdrawn. The environmental impact statements prepared for the 1970s mines and power plant proposal were the first detailed cataloguing of much of

the scientific and historic resources of the area in the proposed monument.

Andalex Resources is the only major holder of federal coal leases in this area that has put forward a concrete proposal to develop its leases. The Department, along with the State of Utah, is in the process of preparing a draft environmental impact statement (EIS) under the National Environmental Policy Act (NEPA), on Andalex's proposal to open a mine in the Smoky Hollow area on the south side of the Kaiparowits Plateau. The mine would involve about 25,000 acres of land in the area covered by the proclamation, as well as require construction of a transmission line and a microwave communication system, and improvement of an existing road or construction of a new road to the mine site.

Andalex's current plan is for the coal to be trucked off the mine site via an existing dirt road (to be paved) south through the GCNRA, or through construction of a new road west and south of the mine site through BLM land. Either route would connect to the existing paved highway at Big Water, Utah, south of the area. From there the coal would continue by truck to a rail line near Cedar City, Utah, or Moapa, Nevada, and from there by rail to customers in the southwest and to the Port of Long Beach to be transported by ship to consumers in the Far East. The proposed mine would operate for more than a half century. Haul trucks would operate 24 hours a day, 365 days a year, with loaded trucks dispatched from the mine at 8 to 10 minute intervals.

The company has applied for a number of permits, rights-of-way, and other authorizations required by federal and state law. The draft EIS on the proposal is expected to be published for public comment in the next few months. Following publication of the draft and a public comment period, a final EIS must be prepared before a final decision on the proposal can be made. The company must receive a favorable decision before any mining can begin.

Establishment of the national monument introduces an important new consideration into the decisionmaking process regarding the proposed mine. Significant questions remaining include (a) whether the proposed project is inconsistent with the purposes of the monument; and (b) whether and to what extent the company has valid existing rights that would have to be addressed. On this second point, the federal coal leases held by Andalex do not convey absolute rights to develop coal. Among other things, the leases are subject to other applicable legal requirements, and do not convey rights of way across federal land located off the leasehold. These rights of way remain subject to an independent federal permit requirement.

One of the other major holders of federal coal leases in the area, Pacificorp, has indicated its interest in relinquishing its leases. My staff has been actively discussing with the company ways to

accomplish this, including an exchange for bidding rights on other federal mineral leases. Andalex has in the past rebuffed Departmental inquiries regarding possible relinquishment of their leases, but I would seek to explore this possibility again if you establish this monument. In order to allow time to assess the company's willingness to pursue alternatives to the proposed project, I would, unless you direct otherwise, suspend the EIS preparation process upon creation of the monument to allow Andalex to assess the situation. Should Andalex not wish to move toward relinquishing the Kaiparowits leases, I would restart the EIS process and move it to completion and an ultimate decision on whether the proposed mine, including associated rights-of-way, can go forward consistent with existing law, including the monument proclamation.

CONCLUSION

Establishing the Grand Staircase-Escalante National Monument would be an exemplary exercise of Presidential authority under the Antiquities Act, well in keeping with past practice through which many notable objects of historic and scientific interest have been preserved, to the Nation's great and lasting benefit. I strongly recommend you sign the proclamation.

The Secretary of the Interior

THE SECRETARY OF THE INTERIOR

WASHINGTON

NOV 6 1996

Memorandum

To: Director, Bureau of Land Management

From: Secretary

Subject: Management of the Grand Staircase - Escalante National Monument

On September 18, 1996, the President created by Proclamation the Grand Staircase - Escalante National Monument in Utah. This is the first National Monument in history for which management responsibility has been given to the Bureau of Land Management (BLM), offering BLM a highly visible opportunity to demonstrate its stewardship. The purposes of this memorandum are: (a) to direct that you issue interim guidance for managing the Monument during the next three years; and (b) to direct you to prepare the management plan for the Monument for my adoption by the end of that period.

The President's Proclamation directs management of the Monument pursuant to applicable legal authorities, including the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA). Further, I want to make certain that we work very closely with the State of Utah as our efforts proceed. While stewardship of the Grand Staircase - Escalante National Monument is the responsibility of this Department, I believe an effective working relationship with the State is crucial to our development of an effective management plan. The State possesses expertise in numerous management disciplines, and its capabilities will complement our own.

INTERIM MANAGEMENT DIRECTION

The public should have more explicit information concerning the management of specific activities during the three year interim period. Accordingly, I ask that you issue appropriate guidance to field managers as soon as possible. Field managers should be fully conversant with that guidance and initiate efforts to provide information to the public as necessary.

The President's Proclamation cited the Monument's unique geological, paleontological, archeological, biological and historical values. It also stated that valid existing rights (VER) must be recognized, withdrew Federal lands and interests in lands within the Monument from entry, location, selection, sale, leasing, or other disposition (except exchange) under the public land laws including, among others, the mineral leasing and mining laws, and stated that existing grazing uses shall continue to be governed by applicable laws and regulations other than the Proclamation. As a general principle,

actions that are not precluded by the Proclamation and which do not conflict with the established purposes of the Monument may continue.

DEVELOPING THE MONUMENT MANAGEMENT PLAN

The President's Proclamation directed me to prepare, within three years, a management plan for the Monument and any necessary regulations. You should take the lead in preparing the plan and proposing it for my adoption. In preparing the plan, you must make certain that it reflects the purposes for which the Monument was established.

In order to assure an effective planning effort, you should develop a detailed inventory of significant resources within the Monument's boundaries which have been identified thus far through available sources. The inventory should have a usable format and be easy to update as new information becomes available. Attached is a bibliography of monument resources that was completed in connection with the Proclamation. Although there is considerable understanding of the Monument's attributes, much more work is needed to identify, assess, interpret and protect them in an integrated manner.

In addition to the State, local and Tribal governments, the private sector, the public and other Federal agencies have interests and insights as to managing the Monument's resources and integrating the Monument with local community development. I expect you to be energetic and innovative in working with these entities. Many models for involving our neighbors have been developed and implemented. Useful lessons can be drawn from these models throughout the West by both government and non-government entities.

The management of the Grand Staircase - Escalante National Monument is one of the Department's most visible and important priorities. Your work will have a profound impact on the public's assessment of the Bureau and of Federal land management in general. I know that the challenges of managing the Monument and preparing its management plan are significant and encompass a very broad variety of scientific, historical, and economic considerations. The Bureau will have my full support and encouragement as your efforts proceed.

Attachment

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Grand Staircase - Escalante National Monument
List of Historic and Scientific Objects of Interest

Objects of Geologic Interest

Description: Perennial streams enter entrenched canyons in white Navajo and deep-red Windgate Sandstone. Deer Creek, Steep Creek, and The Gulch have perennial flows of clear cold water. The Gulch leads up into the spectacular Circle Cliffs where remarkable specimens of petrified wood (60 ft. logs) exist in the Morrison and Chinle formations.

Location: Escalante - Steep Creek WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: White Canyon cuts through the Kaibab Limestone to the Coconino Sandstone, the oldest stratum in the Upper Escalante drainage.

Location: Escalante - Studhorse Peaks unit

Source: Davidson, E.S., Geology of the Circle Cliffs Area, Garfield and Kane Counties, Utah, 1967. p. 10

Description: Big Spencer Flat Road and the V Road is site of "thunderball" iron concretions known as Moqui marbles. These oddities weather out of the Navaho sandstone and are a popular recreation feature.

Location: North Escalante Canyons WSA

Source: Sargent, K.A., Environmental Geologic Studies of the Kaiparowits Coal-Basin, Utah. p. 16, and Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Waterpocket Fold tops out at Deer Point (7,243 feet). Most of the Waterpocket Fold is in the Capitol Reef National Park where it is a major landmark.

Location: Escalante - Colt Mesa unit

Source: Utah Wilderness Coalition. Wilderness at the Edge. p. 189, and Davidson, E.S., Geology of the Circle Cliffs Area, Garfield and Kane Counties, Utah, 1967. p. 61

Description: The inner gorges of the upper Moody Canyons cut into the relatively harder Kaibab Limestone and Coconino Sandstone (oldest exposed layer in this region).

Location: Escalante - Colt Mesa unit

Source: Utah Wilderness Coalition. Wilderness at the Edge. p. 189

Description: Dry Valley Creek Canyon. A waterfall blocks the entrance to Dry Valley Creek Canyon and consequently, the canyon remains in its natural condition. A perennial stream cuts through alluvial benches. It is relict and probably possesses important scientific values.

Location: Mud Springs Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The East Kaibab Monocline or the Cockscomb is unique as a Colorado

Plateau structure. Its alignment with the Paunsaugant, Seevier, and Hurricane faults suggest that it too could be a fault at depth. It extends from the Colorado River north to Canaan Peak and is a major landmark.

Location: Kaiparowits Plateau - The Cockscomb WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Blues - a Cretaceous shale badlands, richly colored and contrasting with adjacent pink sandstone cliffs that forms a significant part of the vista for visitors to Bryce Canyon National Park. The Kaiparowits formation is well exposed here represents an accumulation of exceedingly rapid proportions and an immature sedimentary region which is not well displayed in any other formation in the Colorado Plateau.

Location: The Blues WSA (near Bryce Canyon)

Source: Welch, S.L., Rigby, J.K., Hamblin, W.K., A Survey of Natural Landmark *Areas of the North Portion of the Colorado Plateau*, 1980. p. 248

Description: Fiftymile Mountain is a complex of deep canyons, upwarps, monoclines, hogbacks and a spectacular 42-mile long Straight Cliffs wall, topping a thousand-foot-high cliffline of the Summerville, Morrison and Dakota formations. This complex marks the edge of the Kaiparowits Plateau.

Location: Kaiparowits Plateau - Fiftymile Mountain WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Ancient coal fires of Right Hand Collet Canyon have left surface remains in the form of clinkers and deep red ash. These remains dominate the visual character of the drainage.

Location: Carcass Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Arch. Span of 40 feet located in Calf Canyon, and is visible from the Alvey Wash road.

Location: Carcass Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Burning Hills - naturally occurring underground coal fires have turned steep and rugged exposed hilltops a distinctive red.

Location: Burning Hills WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Devils Garden - oddly shaped arches (including Metate Arch) and rock formations in the hills at the foot of the cliffs marking the Kaiparowits Plateau.

Location: Carcass Canyon WSA (east of WSA)

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: This area possesses exceptional scenic values and contains a

portion of the Cockscomb, a prominent southern Utah geologic feature. the Cockscomb forms 2 parallel knife-edged ridges with a bisection V-shaped trough. Flatirons, small monoliths, and other colorful formations are present on the west ridge. These major features of south central Utah cover over 4,000 acres.

Location: Mud Spring WSA.

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: An interesting fold in Henrieville Creek along the northwest boundary of the WSA is of geologic interest and a sightseeing attraction.

Location: Mud Spring WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Window Wind Arch above the middle trail has scenic value because of its location on the very edge of the Straight Cliffs. The Straight Cliffs escarpment is major landmark in south-central Utah and an important scenic feature within view from the Hole-in-the-Rock road. Woolsey Arch is located in Rock Creek Basin, an area of colorful Navaho sandstone and high cliffs.

Location: Fifty Mile Mountain WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Unique because it consists of 2 prominent southern Utah physiographic systems. It includes the eastern most extension of the White Cliffs component of the famous ascending staircase, cliff and terrace physiography, the Vermillion, White, and Pink Cliffs; and east of the Paria river, the dividing point is the landscape representative of the Glen Canyon physiography of sculptured, dissected, and exposed Navaho sandstone. The area where these merge between Deer Range and Rock Springs Bench is a highly scenic complex and colorful landscape.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Vermillion Cliffs with its associated Wingate Sandstone cliffs, colorful Chinle badlands, and canyons with there multiple colors and the intensity of coloration contribute to high scenic quality. Included in this landscape are Hackberry Canyon, Paria River Valley, Hogeye Canyon, the Pilot Ridge-Starlight Canyon-Kirbys Point area and Eight Mile Pass.

Location: Paria-Hackberry WSA.

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: An area of high scenic value include the breaks of the Rush Beds and the west wall of Cottonwood Canyon, upper tributaries to Hackberry Canyon, Death Valley Draw, and the exceptional Navajo Sandstone domes and fin formations on either side of lower Hackberry Canyon.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Four ONA's designated to preserve "unique scenic values and natural wonders". North Escalante Canyon (5,800 acres), The Gulch (3,430), Escalante Canyons (480 acres), Phipps-Death Hollow (12 more outside WSA)

Location: North Escalante Canyons WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Location: North Escalante Canyons/The Gulch ISA

Description: This area is geologically complex and has some of the most outstanding canyon scenery in the country. Harris Wash a canyon of the classic Escalante River drainage canyon form with many entrenched meanders in the Navajo Sandstone.

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: A unique feature of the Burning Hills is the red coloration in the landscape is the result of geological changes attributed to the naturally occurring coal fires. The coloration creates a highly scenic area.

Location: Burning Hills WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The White Cliffs are high white or yellow cliffs of Navajo Sandstone. Vary in height from 600' at Deer Springs Point bench to 1,200' at Deer Springs Point and the Sheep Creek Bull Valley Gorge-Paria River confluence. The cliffs consistently reach a 1000' in height and the cliffline is interrupted by 8 canyons.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: This area contains twenty-four undeveloped springs. Ten are located in upper Paria, 6 in hackberry, 5 on theeastern border of Cottonwood Creek, and 3 on west boundary. There are also 6 developed springs. These are significant features in this arid environment.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Phipps-Death Hollow ONA (12/23/70) contains 34,288 acres managed to preserve scenic values and natural wonders.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Arches. Peek-a-boo Rock, Wahweap Window, Jacob Hamblin Arch, Starlight Arch, Cobra Arch, Sam Pollack Arch, Woolsey Arch, and several more unnamed arches and natural bridges.

Location: Kaiparowits Plateau and adjacent areas

Source: Sargent, K.A., Environmental Geologic Studies of the Kaiparowits Coal-Basin, Utah.

Description: Sand-calcite crystals from the Morrison Formation. These crystals are the first reported occurrence from rocks of Jurassic age and only reported sand crystals in southern Utah.

Location: Kaiparowits Plateau

Source: Sargent, K.A., Environmental Geologic Studies of the Kaiparowits Coal-Basin, Utah. p. 18

Description: Circle Cliffs in the northeast portion of WSA features intensively colored red, orange, and purple Chinle mounds and ledges at the base of Wingate Sandstone cliffs. Vertically jointed cliffs banded with red, yellow, and white colors and bench tops and upper cliff faces possess innumerable orange-red Kayenta Sandstone knobs. One of most spectacular and distinctive landscapes on the Colorado Plateau.

Location: Steep Creek WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Area includes Escalante Natural Bridge (130' high, 100 ' span) and 4 other natural bridges and arches.

Location: Phipps-Death Hollow WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Gulch is a major geologic feature. Deeply entrenched very sheer red straight line Wingate Sandstone walls. High ridges and slickrock peaks. Ridges drop fairly abruptly to canyons below.

Location: Steep Creek WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Lamanite Natural Bridge. Actually a large arch with good symmetry and form. Located in an impressive setting in a deep side canyon to The Gulch.

Location: Steep Creek WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Petrified wood. Upper Gulch-Circle Cliffs contains large, unbroken logs of petrified wood (NEA 2,213 acres). Maximum log length 36'. The scenic values of these logs is enhanced by their colorful surroundings.

Location: Steep Creek WSA

Source: Utah Statewide Wilderness EIS, 1990 W FEIS 3B 19, and Sargent, K.A., Environmental Geologic Studies of the Kaiparowits Coal-Basin, Utah. p.13.

Description: Outstanding scenic values include the upper portion of Paradise Canyon where sandstone in the Wahweap Formation outcrops as colorful walls and cliffs. Ponderosa pine growing in the sandstone enhance the scenic values. Two sandstone monoliths or fins above Alvey Wash are prominent geological features.

Location: Death Ridge WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The area contains a unique canyon and bench system. The entire ISA contains outstanding scenery. Examples include the area east of Horse Canyon. Four canyons have isolated 10 benches of varying size . Many bench tops have

intricate pattern of innumerable e orange-red Kayenta Sandstone knobs. Wolverine Canyon and Death Hollow have extremely narrow and convoluted sections. Another feature, Harris Wash a canyon of the classic Escalante River drainage canyon form with many entrenched meanders in the Navajo Sandstone.

Location: North Escalante Canyons/The Gulch ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Mollie's Nipple, an erosional remnant is a major landmark in the area.

Location: Kaiparowits Plateau.

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Natural Arches. Sam Pollock Arch, located at the head of a tributary drainage of Hackberry Canyon, and Starlight Arch located west of No Man's Mesa.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Area of diverse geology represented by spectacular deep canyons. The Escalante River canyon is 1100 feet deep. The canyon walls are rough and broken and the canyon is narrow and it meanders. Pure white to golden sandstone has been eroded into expanses of slickrock. Death Hollow Canyon is 1,000' feet deep and meandering. The extensive upper basin through which Mamie Creek flows is a extremely dissected area of canyons, tanks, other formations. Red layers of Carmel Formation cap high mesas and ledges of the exposed Kayenta Formation.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Petrified wood deposits just west of the Old Paria Townsite and in Hackberry Canyon. Both are in the Chinle formation.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: All the topographic features of the Kaiparowits region have been developed in sedimentary rocks. The Kaiparowits Plateau is a slightly tilted sedimentary mass that extends as a narrow mesa from the High Plateaus to Glen Canyon 70 miles distant. Its culminating point, Canaan Peak is an outlier of the Table Cliff Plateau; the Paria Plateau is a huge blick of sandstone, the Waterpocket monicline is a ridge of folded rock intricately dissected and flanked by hogbacks, and the broken "comb" in the vicinity of Paria is the edge of sandstone beds uptoruned in the East Kaibab fold. The Circle Cliffs are inward-facing walls of sandstone that rim an oval depression. These prominent features are but large-scale examples of the mesas, buttes, and ridges that characterize the landscape of southern Utah.

Location: Kaparowits Plateau region

Source: Gregory, H.E. and Moore, R. C. The Kaiparowits Region: A Geographic and Geologic Reconnaissance of Parst of Utah and Arizona. 1931.

Description: Paria River from Colorado River to its source, identified by NPS as

possessing values that may be of national significance, potential to be included in the National Wild and Scenic River System.

Location: Paria-hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Escalante River from Lake Powell to its source , a section of 14.9 miles, was designated as for study as a candidate Wild and Scenic River by the Secretary of the Interior on 10/11/70.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Lower Calf Creek Falls. Calf Creek Canyon is characterized by red alcoved walls, 2 waterfalls, and extensive expanses of white slickrock. Lower Calf Creek Falls drops 126' and Upper Calf Creek's drop is 86'. High educational values associated with interpretation of these areas.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The area contains 40 miles of perennial streams, a significant feature in this arid environment.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Objects of Paleontologic Interest, August, 1996

Description: Fossil assemblage photographs. Typical mollusks from Tropic Shale, south of Escalante include straight cone edphalopods, ammonites, gastropods, and pelecypods and Cretaceous sharks teeth from the Straight Cliffs Formation.

Location: Kaiparowits Plateau

Source: Sargent,. K.A., Environmental Geologic Studies of the Kaiparowits Coal-Basin, Utah. pp 14-15

Description: Gray Cliffs/Pink Cliffs - This sequence of rocks may contain one of the best and most continuous records of Late Cretaceous terrestrial life in the world. Formation has yielded early mammals, lizards, dinosaurs, crocodillians, turtles, mollusks.

Location: Kaiparowits - The Blues WSA

Source: BLM, Escalante/Kanab RMP - Grand Staircase Ecosystem Analysis, 1994

Description: Fossils deemed by the Museum of Northern Arizona in a 1976 study to be of major importance. They are found in the Cretaceous Wahweap Formation outcrops include abundant fragments of turtle shells and dinosaurs, as well as several crocodile teeth. There is an excellent chance that mammal fossils will be found

Location: Kaiparowits Plateau - Nipple Bench unit

Source: BLM, Kaiparowits power project environmental impact statement, 1976

Description: The Straight Cliffs Formation is limited to the southern Utah area. It contains primitive mammals including one of the potentially oldest marsupial fossils identified.

Location: Kaiparowits Plateau

Source: BLM, Warm Springs Project Preliminary Draft EIS, 1996

Description: Invertebrate and vertebrate specimens found Straight Cliffs, Tropic Shale, and Dakota Formations. 13 collection sites recorded (gastropods, cephalopods in upper Cretaceous Formations, vertebrate in Dakota and Tropic Shales). Likely to occur along entire length of the Straight Cliffs

Location: Carcass Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Kaiparowits is of interest in understanding the evolution of mammals and other terrestrial vertebrates. Very little is known of Cretaceous mammals prior to the latest part of that period. The mid-Cretaceous mammalian twilight zone is spanned by the fossiliferous, terrestrial rock units of the Kaiparowits region. They contain unique evidence bearing on the early diversification of important mammalian groups of the Late Cretaceous. The thickness, continuity, and broad temporal distribution of the Kaiparowits sequence provides the opportunity to document changes in terrestrial vertebrate assemblages over a wide span of Late Cretaceous time.

Location: Kaiparowits Plateau

Source: Eaton, Jeffrey G, and Cifelli, Richard L. Preliminary report on Late Cretaceous mammals of the Kaiparowits Plateau, southern Utah, 1988

Description: Extremely significant fossils including marine and brackish water mollusks, turtles, crocodillians, lizards, dinosaurs, fishes, and mammals have been recovered from the Dakota formation, Tropic shale, Straight Cliffs Formation (Tibbet Canyon, Smoky Hollow, and John Henry members), and Wahweap formation in the area around the proposed Andelex mine and some localities lie directly along the proposed haul routes. This sequence of rocks(including the overlying Wahweap and Kaiparowits formations) contain perhaps the best and most continuous record of Late Cretaceous terrestrial life in the world

Location: Kaiparowits Plateau

Source: Eaton, Jeffrey G., Personal correspondence to Mr. Mike Noel, BLM, 1991

Objects of Prehistoric Interest

Description: Sixty sites have been recorded and the potential for additional sites is exceptionally high. Sites discovered to date include lithic scatters, 13 rockshelters (some w/storage cists and rock art), 1 pithouse village site and 1 structure (probably of Anasazi origin). Some of the rock art and rock shelter and 1 campsite are potentially eligible for nomination to the NRHP.

Location: North Escalante Canyons/The Gulch ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Friendship Cove Pictograph site nominated to NRHP. This site consists of a set of large Fremont style pictographs painted on the face of a large sandstone cliff.

Location: Phipps-Death Hollow ISA, eastern part

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Forty-four sites of diverse types have been recorded in the area. 14 rock art (petroglyph and pictographs sites (2 from Fremont culture), 1 Pit-house village site, lithic scatters of Paiute and Anasazi , and 6 rockshelters have been discovered. Potential for more sites is good.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Situated at the intersection of three major prehistoric cultures the Plateau has long been a magnet for archeological study. It has been recognized that the Kaiparowits Plateau might contain important clues that would aid in answering questions in the archeology of the Southwest.

Location: Kaiparowits Plateau

Source: Utah Wilderness Coalition. Wilderness at the Edge. p. 147 and Lister, Florence C., Kaiparowits Plateau and Glen Canyon prehistory, an interpretation based on ceramics, 1964

Description: Fiftymile Mountain Archeological District contains more than 400 sites including Anasazi habitations and granaries. Important scientific value. Some of the most significant cultural resources in the Four Corners area. Archaeological District (47,325 acre) has been nominated to NRHP. Majority of sites are masonry structures (of 1-10 rooms). Most are of Virgin Anasazi origin but include sites attributed to Fremont, Hopi, and Paiute. Navaho are also expected of occupying the area. 4,000 total sites may be located in WSA.

Location: Fiftymile Mountain WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Sixty-five sites have been recorded. They include lithic and ceramic scatters, masonry structures (granaries and storage cists), one rock shelter. Masonry and some lithic/ceramic associated with Virgin Anasazi/Virgin-Kayenta Anasazi. Two are Pueblo II-III time period. Some sites are associated with Paiute-age or Archaic-age peoples. At least 8 sites in this area are eligible for nomination to the NRHP.

Location: Wahweap WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: High concentration of prehistoric sites. Although surveys are incomplete for the Warm Creek unit more that 600 sites have been found ranging from lithic scatters and campsites to rockshelters.

Location: Kaiparowits Plateau/Warm Creek unit

Source: BLM, Kaiparowits power project environmental impact statement, 1976

Description: Part of a larger area extensively used by the Kayenta Anasazi and later the Southern Paiute Indians. Site densities expected to be moderate to high.

Location: Kaiparowits Plateau/Squaw Canyon unit

Source: ERT, 1980, Kaiparowits coal development and transportation study, final report

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Description: Prehistoric site densities are high on top of Nipple Bench. Sites represent Fremont, Virgin Anasazi and Kayenta Anasozi. The sites represent complex associations of features and artifacts and indicate permanent or extensive camps in rock shelters.

Location: Kaiparowits Plateau/Nipple Bench unit

Source: Fish, Paul, Preliminary Report Kaiparowits Power Project

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Description: Six sites have been recorded. One is Pueblo II Anasazi occupation site, with others unidentified.

Location: Burning Hills WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: One hundred-five sites (primarily lithic scatters) have been recorded covering a broad period of occupation. Ten rockshelters w/storage cists or storage caches, 1 w/masonry room, 3 w/granaries associated with Anasazi or Fremont have been discovered. Additional sites include petroglyph and pictograph panels associated with shelter sites and 1 burial site.

Location: Carcass Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: One hundred thirty-four documented sites represent virtually all known prehistoric cultures in southern UT (Archaic, Fremont, Anasazi, Southern Paiute). 8,000 years of prehistory are represented. The sites primarily represent temporary habitation by hunter gatherers..

Location: Death Ridge WSA

Source: BLM Utah Statewide Wilderness EIS, 1990, and Hauck, F.R., Cultural Resource Evaluation of South-Central Utah, 1977-1978

Description: The area contains 41 recorded sites and based on surveys may contain exceptionally high densities of sites.. Known sites include rockshelters, pit houses, lithic scatters, and masonry structures. Pictograph panels are in Deer Creek Canyon and petroglyphs are found in Snake Creek Canyon.

A study located and estimated 612 sites per 23,000 acres, 564 potentially eligible for nomination to the NRHP (southern border of WSA). Another inventory estimated 360 sites per 23,000 acres at the northern border of the WSA.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Kayenta Pueblo culture inhabiting the Straight Cliff and portions of the Escalante River drainage between A.D. 1000 and 1200 were likely in contact with the Fremont culture. Although both inhabited the area at the same time and competed for limited agricutural lands there is no evidence of open conflict during this time. Some modifications of pottery making techniques between the two cultures indicates that there was trade and exchange between them. Little is known positively about the Kayenta culture, and additional research in this area could provide valuable inshight on ineractions between the two cultures.

Location: Straingt Cliffs WSA

Source: Lister, Kaiparowits Plateau and Clen Canyon Prehistory: An interpretation based on ceramics. 1964.

Objects of Historic Interest

Description: Dance Hall Rock/Hole-in-the-Rock Trail. While the Hole-in-the-Rock Trail was under construction in 1879, Mormon Pioneers camped at Fortymile Spring and held meetings and dances in the shelter of Dance Hall Rock. Designated historical site by DOI 1970.

Location: Two miles west of the Glen Canyon NRA on the Hole in the Rock Trail

Source: Utah Wilderness Coalition. Wilderness at the Edge. - p. 182

Description: Historic route constructed in 1879 to provide access from Escalante to areas on the opposite side of the San Juan River in Southeast Utah.

Location: Historic trail running from Escalante to Hole in the Rock in Glen Canyon NRA

Source: Lambrechtse, Rudi. Hiking the Escalante, 1985

Description: Boulder Mail Trail. Used to carry mail between Escalante and Boulder beginning in 1902. Much of trail still visible where necessary to construct through slickrock. Nominated to NRHP. Popular backpacking route.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Boynton Road. Constructed 1909 as short cut between Escalante and Salt Gulch. Abandoned after 2 years because of flooding. Visible over approx 9 of its 10 miles.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Escalante-Boulder telephone line: First Boulder-Escalante telephone line constructed by Forest Service in 1911 providing first phone service to area. Still visible between Antone Flat and Sand Creek.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Washington Phipps grave. A historical grave site of an early pioneer shot in 1878 in a dispute with his partner John Boynton. Provided the namesake for the area.

Location: Phipps Death Hollow

Source: Lambrechtse, Rudi. Hiking the Escalante, 1985

Description: Old Boulder Road. Main route between Escalante and Boulder until the CCC built Hell's Backbone Road and Highway 12 in 1930's to replace it.

Location: Phipps-Death Hollow ISA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: The Hattie Green mine, an early copper working located on the crest of The Cockscomb.

Location: The Cockscomb WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Old Paria Townsite was established in 1874 on the bench above the eastern bank of the Paria River by Mormon settlers who attempted to farm the bottomlands. Site was abandoned in 1890.

Location: adjacent to Paria-Hackberry WSA

Source: Abby, Edward and Hyde, Philip. Slickrock p.46

Description: Old Paria Townsite movie set. Built in the 1960's to film several movies. Now abandoned but still a popular recreation destination.

Location: adjacent to Paria-Hackberry WSA

Source: Abby, Edward and Hyde, Philip. Slickrock p.46

Objects of Biological Interest

Description: Riparian zones are corridors for many of the region's species, including neotropical migrant birds. The corridors (including the Escalante, and Paria Rivers and Johnson Creek and their tributaries) bisect the region north to south, allowing for exchange of individuals among different animal populations. The importance of movement corridors to the long term viability of animal populations is of great scientific and management interest. This area would afford many opportunities to enhance this ecological issue.

Location: Entire monument proposal including the Escalante area, Kaiparowits Plateau, and areas west to Kanab including the Escalante, Paria rivers and Johnson Creek

Source: Edwards, Tom, 1996; Knopf, 1985; Armbruster and Lande 1993; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al. 1996; Diamond, 1981; Fahrig and Merriam, 1985; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompson, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: 25 miles of riparian corridor in unit. Connects mountains to desert lowlands. Has great concentration of hanging gardens and riparian vegetation, including relictual populations in canyon bottoms. Also supports many rock crevice communities. Connects other protected areas. High plant endemism, due to large extent of parent material exposure.

Location: Escalante River

Source: BLM Wilderness EIS; Knopf, 1985; Shulz, 1993; Armbruster and Lande 1993; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al. 1996; Diamond, 1981; Fahrig and Merriam, 1985; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompson, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: Riparian corridor links high country to lowland desert scrub. Connects protected areas. Has high concentrations of isolated communities: hanging garden, rock crevice and canyon bottom communities. Also has an abundance of packrat middens.

Location: Paria River

Source: Van Devender and Spaulding, 1979; BLM Wilderness EIS; Knopf, 1985; Shulz, 1993; Armbruster and Lande 1993; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al. 1996; Diamond, 1981; Fahrig and Merriam, 1985; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompson, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: Fifty miles of perennial streams including the Paria River (which is a wild and scenic river inventory segment). Riparian vegetation covers 500 acres.

Location: Paria-Hackberry WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Three major floras meet in this area. Plants from the Mojave, Arizona deserts and northern Utah are all found here, with a few species from the Great Plains. The Colorado Plateau is surrounded by high mountains, isolating the flora and fauna. Unlike many ecosystems, the plant density, diversity and stature within the monument is determined more by substrate than climate. Consequently, isolation, plus the great diversity of substrates (providing a wide range of soil chemistry and physical characteristics) found within close proximity to each other has resulted in a high level of plant endemism in this area. Eleven species found in the monument are found nowhere else in the world. Of plants that occur only in Utah or on the Colorado Plateau, 125 species occur in the monument. The Canyonlands portion of the Colorado Plateau, much of which is contained in the monument, is considered the richest floristic region in the Intermountain West, and contains 50% of Utah's rare and endemic plants. 90% of these rare and endemic species are found on substrates typical of most of the monument. Of the Canyonlands area, the monument area is considered one of the most significant for endemic populations, with more than 10% of the flora being found no nowhere else.

Of additional significance is that many of the plants in the monument are diploid species. This means they represent the basic genetic stock from which polyploid species in the area evolved. This makes this area of great significance to plant evolutionary biologists and provides a unique opportunity to study the evolution and speciation of plant species, as well as the structure and dynamics of plant communities, independent of climate.

Location: Entire monument

Source: Kaiparowits Power Project EIS; Axelrod, 1960; Utah Natural Heritage Program plant database; Nabhen and Wilson, 1996; Shulz, 1993; Albee et al., 1988; Welsh, 1974; Welsh et al. 1975; Hintze, 1988; Dott, 1996; Shreve, 1942; Cronquist et al., 1977; Utah Natural Heritage Program plant database

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Description: The Colorado Plateau was uplifted and downcut without deformation. As a consequence, large areas of unmixed geologic parent materials are exposed, and plants must adapt to large array of highly distinct parent materials. These substrates are sharply demarcated, and often occur within a few meters of each other. This situation offers the unique opportunity to examine the role of soil physical and chemical characteristics in determining plant and animal community structure independent of climatic variables, an important ecological question. It also results in different plant community structure and dynamics than is generally observed in other ecosystems. This area contains shales, siltstones, mudstones, sandstones and limestone of differing depths, and deposited in a variety of environments (marine, freshwater and eolian). Each soil depth and depositional environment has very different chemical and physical characteristics. As a result, there is a great diversity of substrates in this area, each supporting a unique plant community.

Location: Entire monument

Source: Hintze, 1988; Nabhen and Wilson, 1996; Gross, 1987; Dott, 1996; Roberts, 1987

Description: The presence of steep elevational gradients gives the opportunity to sort out the role of temperature and precipitation in structuring plant and animal communities. Elevational gradients have traditionally been used by scientists as a way of examining factors controlling biotic community structure. Juxtaposition of diverse substrates and elevational gradients gives an unparalleled opportunity to determine the respective roles of soil chemistry, physical characteristics, elevation, rainfall and temperature in structuring biotic communities. In addition, it allows for high biodiversity in a small area.

Location: Entire monument

Source: Kaiparowits Power Project EIS; Axelrod, 1960; Utah Natural Heritage Program plant database; Nabhen and Wilson, 1996; Shulz, 1993; Albee et al., 1988; Welsh, 1974; Welsh et al. 1975; Hintze, 1988; Dott, 1996; Shreve, 1942; Cronquist et al., 1977

Description: The Escalante Plateau is the home to approximately 300 species of amphibians, birds, mammals, and reptiles. This diverse set of wildlife species includes over 20 species of birds of prey including the bald eagle, peregrine falcon, and was the historical range of the condor. The region contains 2 of the 7 recognized centers of endemism for fishes of the western United States.

Location: Escalante Plateau

Source: Davidson et al. 1996; Tom Edwards, 1996, Behnke, R.J., and Zar, M., 1976

Description: Contains many different geologic substrates (therefore soils with different physical and chemical attributes) in a small area. The majority of endemic in Utah are found on these particular substrates; consequently, this area is expected to have a high concentration of endemics.

Location: Escalante -along boundary of Glen Canyon NRA and Capital Reef National Park

Source: Utah Natural Heritage Program plant database; Nabhen and Wilson, 1996; Shulz, 1993; Albee et al., 1988; Welsh, 1974; Welsh et al. 1975; Hintze, 1988

Description: Large expanses of fine-textured soils (Morrison, Mancos/Tropic) shales support large number of endemic plant species, fossils.

Location: Henrieville to Escalante

Source: Hintze, 1988; Shulz, 1993; BLM Wilderness EIS

Description: An exposed monocline with many soils/substrates in close juxtaposition provides tremendous biodiversity of both general and endemic flora. High salt content of stream provides habitat for salt-tolerated riparian plants. Provides a elevational gradient from ponderosa pine to desert scrub. In addition, the rocky substrate has provided refugia for many Arcto-Tertiary plants, providing a unique opportunity to examine the effects of ancient floral presence in the structuring of present-day plant communities. This area also supports a very high diversity of both general and endemic flora.

Location: The Cockscomb

Source: Hintze, 1988; Shulz, 1993; Albee et al., 1988; Axelrod, 1960; Welsh, 1978; Stevens, 1992; Dott, 1996;

Description: Contains a concentration of many different geologic substrates/soils with different physical and chemical attributes. This area has a high concentration of endemics. This boundary also abuts protected areas (Glen Canyon, Capitol Reef), thereby effectively increasing the value of all three areas for biological conservation. In addition, the Waterpocket Fold has isolated two outcrops of the same parent material. These two areas now support different floras. This presents an outstanding scientific opportunity to explore processes of speciation.

Location: Far eastern boundary

Source: Hintze, 1988; Shulz, 1993; Albee et al., 1988; Axelrod, 1960; Welsh, 1978; Stevens, 1992; Dott, 1996; Armbruster and Lande, 1993; Fahrig and Merriam, 1985; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al, 1996; Diamond,

1981; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompsón, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: This is an exposed monocline. Consequently, many substrates (Summerville, Morrison, Dakota, Tropic, Entrada, Navajo, Wingate and Carmel) are exposed directly next to each other, providing an opportunity for studies of ecological processes independent of climate. This monocline also has an elevational gradient, facilitating the study of effects of temperature and moisture on community dynamics. In addition, the rocky substrate has provided refugia for many Arcto-Tertiary plants, providing a unique opportunity to examine the effects of ancient floral presence in the structuring of present-day plant communities. This area also supports a very high diversity of both general and endemic flora.

Location: Straight Cliffs area

Source: Hintze, 1988; Shulz, 1993; Albee et al., 1988; Axelrod, 1960; Welsh, 1978.

Description: Diversity of plant life ranging from low desert shrub to Ponderosa Pine (less that 1 mile apart)enhances the study and observation of ecology. 3 small stands of Ponderosa pine in Alvey Wash.

Location: Death Ridge WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Contained within the monument are 3-5 spatially separated areas where the same substrates are exposed in close proximity to each other. In addition, there are 5 elevational gradients along riparian corridors. This is critical for replicated scientific work to be conducted.

Location: Entire monument

Source: Hintze, 1988; USGS Topographical Maps

Description: Riparian corridor with elevational gradient, connecting desert low lands to the high country. Vermillion, White, Pink Cliffs (Triassic, Jurassic, Cretaceous material).

Location: Johnson's Creek

Source: Hintze, 1988; USGS Topographical Maps; Beier, 1993; Noss, 1992, 1993

Description: Fifty Mile Mountain. Presence of aspen on Pleasant Grove, Steer Canyon, and Pinto Mare Canyons.

Location: Fifty Mile Mountain WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Protects lands at low elevation sites frequently rich in species diversity. The range of elevation in these areas from approximately 4500-8300 feet encompasses a wide variation in elevation and will capture the full diversity of plant and animal species in the region.

Location: Entire monument proposal including the Escalante area, Kaiparowits Plateau, and areas west to Kanab

Source: Hintze, 1988; Utah BLM Final Wilderness EIS, 1990

Description: The monument contains an abundance of hanging gardens, tinajas, canyon bottom, dunal pockets, salt-pocket and rock crevice communities. These small, isolated populations often contain unusual, often relictual plants and animals. Hanging gardens and canyon bottom communities harbor riparian plants and their pollinators, as well as unique vertebrates (bats and small mammals) and soil fauna. Tinajas are important aquatic resources, and contain a diverse array of tadpole, fairy and clam shrimp, amphibians, algae, water beetles, other crustaceans, snails, mosquito and gnat larvae and aquatic/riparian plants. Highly saline areas are found around many seeps and streams, and consist of plants and animals adapted to highly saline conditions. Dunal pockets contain species adapted to shifting sands, while rock crevice communities consist mostly of slow-growing species that can thrive in extremely infertile sites. These communities offer a chance to examine gene flow dynamics, and to distinguish the respective role of pollen versus seeds. They offer an opportunity to study ground water flow dynamics in the absence of significant fluvial processes, and island biogeography of plants, pollinators and ground-dwelling biota. They also are highly simplified, discrete ecosystems, making them ideal for elucidating basic ecosystem processes.

Location: Entire monument

Source: Nabhen and Wilson, 1996; Harper et al., 1994; Welsh et al., 1993; May et al., 1995; Fowler et al., 1995; Graff, 1988

Description: These canyons provide a high concentration of isolated, unique plant and invertebrate communities: hanging garden, rock crevice, and canyon bottom communities. Many relictual plant species can be found in these communities. Pack rat middens are abundant, providing paleoclimate and paleo-vegetation information.

Location: Escalante Canyons

Source: Axelrod, 1960; BLM Wilderness EIS; Van Devender and Spauling, 1979; Fowler et al., 1995; Nabhen and Wilson, 1996

Description: Dunal pockets contribute Great Plains species to the flora. These are unique, isolated plant communities.

Location: Cockscomb to Kaiparowits

Source: Hintze, 1988

Description: Unique, isolated communities are located throughout the monument. These include hanging gardens, tinajas, canyon bottom, dunal pocket, salt pocket and rock crevice communities. They provide great opportunities for examining evolution, gene flow, island biogeography and other ecological principles.

Location: Entire monument

Source: Case and Cody, 1988; Diamond, 1981; Dott, 1996; Harris, 1984; Ludwig and Whitford, 1981; Fowler et al., 1995; Nabhen and Wilson, 1996; Roberts, 1987; Reice, 1994; Axelrod, 1960

Description: Biological conservation theory and literature suggests that large contiguous conservation areas increase both extent and probability of population survival, increases protection of migratory pathways, and is the most effective means of conserving aquatic and riparian communities.

Location: Entire monument

Source: Soule, 1987; Davidson et al., 1996; Miller, 1961; Minckley and Deacon, 1968; Armbruster and Lande, 1993; Fahrig and Merriam, 1985; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al. 1996; Diamond, 1981; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompson, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: The connection with Glen Canyon provides a larger protected area. It also provides low desert vegetation as part of the vegetational gradients. Large areas are important for maintaining the evolutionary potential of plants and animals, allowing for the exchange of genetic material among the separate populations that constitute a population.

Location: Common boundaries and riparian connections with Glen Canyon NRA, Capitol Reef NP, Box Hollow Wilderness and Paria Wilderness

Source: Hintze, 1988; Shulz, 1993; Albee et al., 1988; Axelrod, 1960; Welsh, 1978; Stevens, 1992; Dott, 1996; Armbruster and Lande, 1993; Fahrig and Merriam, 1985; Beier, 1993; Belovsky, 1987; Brown, 1971; Davidson et al. 1996; Diamond, 1981; Frankel and Soule, 1981; Harris and Gallagher, 1989; Heaney, 1984; IUCN, 1978; Kushlan, 1979; Lomolino and Channell, 1995; Meffe and Carroll, 1994; Newmark, 1995; Noss, 1993; Patterson, 1984; Pickett and Thompson, 1978; Primack, 1993; Saunders et al., 1991; Shaffer, 1981; Soule, 1987; Soule and Wilcox, 1980; Wegner and Merriam, 1979; Wilcove et al., 1986; Willis, 1974.

Description: Cryptobiotic soil crusts are critical for soil stability, nutrient availability for vascular plants and normal soil surface temperatures. These crusts are extremely fragile and easily disrupted by soil surface disturbances such as trampling or off-road vehicles. Since the soils in the monument are highly susceptible to erosion, it is important that these biocrusts be protected so they stabilize these erodible soil surfaces. In addition, these ecosystems have few nitrogen-fixing plants. Since these crusts provide nitrogen to these soils, they are a critical part of these nitrogen-limited ecosystems.

Location: Entire monument

Source: Belnap, 1994, 1995; Belnap and Harper, 1995; Belnap et al., 1994; Jefferies, 1989; Harper and Marble, 1988; Johansen, 1993; Mack and Thompson, 1978; Fleischner, 1994

Description: Disturbance of most soil surfaces in the monument area will result in soil surface temperature changes, as bio-crusted surfaces are darker than the substrates underneath them. The expected lowering of temperature with disturbance would result in cooler soil temperatures, and thus later spring plant germination and lower nutrient uptake rates. This may adversely effect desert plant growth in early spring. Surface temperatures also influence foraging and burrowing patterns for many soil invertebrates, and many effect community dynamics of these species.

Location: Entire monument

Source: Ludwig and Whitford 1981; Belnap 1995

Description: Ecosystems in this area are some of the most stable documented to date, as both large and small scale disturbances are limited spatially and temporally. Very little of this area was glaciated in the Pleistocene. Most plant communities evolved without fire or grazing by large ungulate herds, as evidenced by characteristics of the soils and the flora. Catastrophic events are minimal, with the exception of wash bottoms. Microsite disturbances are minimal as well, as most soils support very low populations of invertebrates. 1880

photos repeated in 1990 show many sites virtually unchanged, with the same tree, shrub and grass individuals present, indicating very low species turnover rates in this region relative to other ecosystems. In addition, dead tree branches can still be found in virtually the same condition as they were 100 years ago, indicating plant tissue decomposition rates are extremely low in this region. This makes this area highly unique, as most ecosystems are believed to be structured disturbance. In this region, ecological processes can be studied independent of the effects of disturbance to give us greater insight into their functioning (i.e. factors controlling exotic plant invasions, species-species interactions, etc.)

Soil physical, chemical and biological features appear to be both easily damaged (low resistance) by surface disturbance and have very slow recovery rates (low resilience) when compared to other deserts or more mesic systems . This may be a result of evolution of this ecosystem evolving in the relative absence of disturbance (Belnap 1995, 1996). Therefore, this area is important in the study of how disturbance influences community dynamics, including species-species interactions, and for understanding how to restore these fragile systems. This also means that this area is highly susceptible to damage by different land uses, including recreation and grazing.

Location: Entire monument

Source: Belnap, 1995, 1996; Belnap et al., 1994; Mack and Thompson, 1982; Fleischner, 1994; Kleiner and Harper 1972; Harper et al., 1994; Webb, 1994; Rogers, 1982; Pickett and White, 1985; Moldenke, 1995; Evans and Ehleringer, 1993; Turner et al. 1993; Iverson et al. 1981; Webb and Wilshire 1981; Larsen 1996; Bowers et al. 1994

Description: Isolation of this area has resulted in minimal human impacts. Many of the ecosystems found in this area have received little, if any, human use and the type and extent of disturbance has that has occurred is known. In addition, there are large areas unbroken by roads. This is essential to the protection and conservation of plant and animal species.

Location: Entire monument

Source: Wilcox et al 1986; Wilcox and Murphy 1985; Mader et al., 1990; Osley, et al., 1974; Rost and Bailey, 1979; Witmer and Calesta, 1985

Description: The monument lacks any areas that have been invaded to any large extent by exotic species. There are few such areas in the Intermountain West, and they can provide invaluable information in understanding the ecology and dynamics of exotic plant invasion. These areas aid scientists in understanding what makes systems resistant to such invasions, and thus help land managers predict what areas are susceptible to invasion and restore already-invaded regions.

Location: Entire monument

Source: Billings, 1994; Fleischner, 1994; Forcella and Harvey, 1983; Gross, 1987; Hunter, 1990; Loope et al., 1988; MacMahon, 1987; Pellant and Hall, 1994

Description: Six threatened or endangered candidate species are located within or near this area.

Location: Wahweap WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Contains Peregrine falcon (endangered) and 6 special status animal species and 5 special status plant species.

Location: Mud Spring WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Habitat for Swainson's hawk, golden eagle (Sensitive) and peregrine falcon (endangered).

Location: The Blues WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Peregrine falcon and bald eagle (endangered). 8 animal and 5 plant species of special status.

Location: Paria-Hackberry and Cockscomb WSA and Wahweap WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Thirteen species of raptors are known or suspected of nesting in the WSA

Location: Burning Hills WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Relict plant community in the upper part of Dry Valley "probably possesses important scientific values"

Location: Mud Spring Canyon WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: Unique relict plant community of pinion-juniper and sagebrush-grass park vegetation accessible only by a steep trail. One of the few remaining unaltered plant communities in Utah. No Man's Mesa RNA was designated as an ACEC in 1986. Such areas are invaluable to science. They provide restoration and management goals for administration of lands. Such areas are also critical to scientists who are trying to understand the natural functioning of ecosystems. Grasslands are especially valuable, as almost all have been heavily grazed for over a century.

Location: Paria-Hackberry WSA (No Man's Mesa and Little No Man's Mesa)

Source: Utah BLM Statewide Final Wilderness EIS, 1990 and Kleiner and Harper, 1972

Description: Four Mile Bench Old Tree Area. Unique area of extremely old (1,400 years) pinon and juniper trees. Unique scientific values on over 1,000 acres.

Location: Wahweap WSA

Source: Utah BLM Statewide Final Wilderness EIS, 1990

Description: This region is at the northern end of areas that receive summer monsoonal rains, and is at the southern end of areas that depends on winter rains. This distinction is very important to the physiological functioning of plants in this moisture-limited areas, as even minor changes in temperature and/or rainfall may lead to major differences in water availability, and consequently, plant metabolic processes. Climate change is expected to alter both rainfall timing and amount, as well as temperature. This, in turn, would alter plant physiology, water use patterns and community composition in this

region, making the monument an excellent place for studying global climate change.

Location: Entire monument

Sources: Ayyad 1981; Graff 1988; Van Devender and Spaulding 1979; Wagner 1981

Description: Unlike most deserts that are primarily depositional environments, the CP is an erosional one (Welsh 1979; Nat Hist). This contributes to high endemism, as substrate material is not mixed. In addition, it makes this region highly susceptible to soil loss when surfaces are disturbed. This soil loss has a negative impact on plant and aquatic communities, as well as dam sediment loads.

Location: Entire monument

Source: Welsh, 1979; Harper et al., 1994

Description: The effects of scaling up and down are not known for many ecological processes. The multitude of variably sized, discrete watersheds found in this area offer a unique opportunity to test the effects of scaling for hydrological and biological processes. In addition, the close spacing of these watersheds offers a chance to separate the effects of area per se from other environmental factors on community structure.

Location: Entire monument

Source: Allen and Hoekstra 1987; Reice 1994; Pickett and White 1985; Rosenweig 1985

Description: Semi-arid and arid lands of the western United States are highly susceptible to desertification. The lack of natural disturbance in much of this area offers the opportunity to study the effects of different types and levels of land use and to better understand the steps leading to desertification.

Location: Entire monument

Source: Dregne, 1983

Description: This area contains few exotic plants. Having this resource gives the opportunity to better understand what factors inhibit or facilitate exotic plant invasions. Roads have been heavily implicated in facilitating exotic plant invasion, while intact Cryptobiotic soil crusts and less favorable soil chemistry may inhibit such an invasion. Invasion could fundamentally alter these communities, by altering species composition, community dynamics and fire cycles.

Location: Entire monument

Source: Monsen and Kitchen, 1994; Kelly 1996; Harper and Marble 1988; Davidson et al. 1996

Description: Quaternary resources are abundant in the monument. Pack rat middens enable reconstruction of paleoclimates and paleo-vegetation, while Pleistocene animal remains found in alcoves.

Location: Entire monument

Source: Harper et al., 1994

Description: Unlike more mesic ecosystems, there is little evidence that desert communities demonstrate traditional successional sequences. There is little or

no modification of soils or other site characteristics by previous-occurring plants. Understanding of this is important for restoration efforts. The monument offers an excellent opportunity to study this phenomenon independent of climate and disturbance factors.

Location: Entire monument

Source: Barbour, 1981; MacMahon, 1987; Shreve, 1942; Dott, 1996

Description: Peregrine falcon and Bald Eagle use these areas. Areas are habitat for 7 plant and 9 animal species considered sensitive.

Location: Death Ridge and Fifty Mile Mountain WSAs

Source: Utah Statewide Wilderness Study Report, 1991

Description: Peregrine falcon and Bald Eagle use these areas. Areas are habitat for 8 plant and 7 animal species considered sensitive.

Location: Phipps Death Hollow ISA and Steep Creek WSA

Source: Utah Statewide Wilderness Study Report, 1991

Description: Peregrine falcon and Bald Eagle use these areas. Areas are habitat for 9 plant and 7 animal species considered sensitive.

Location: North Escalante Canyon, The Gulch and Carcass Canyon WSAs

Source: Utah Statewide Wilderness Study Report, 1991